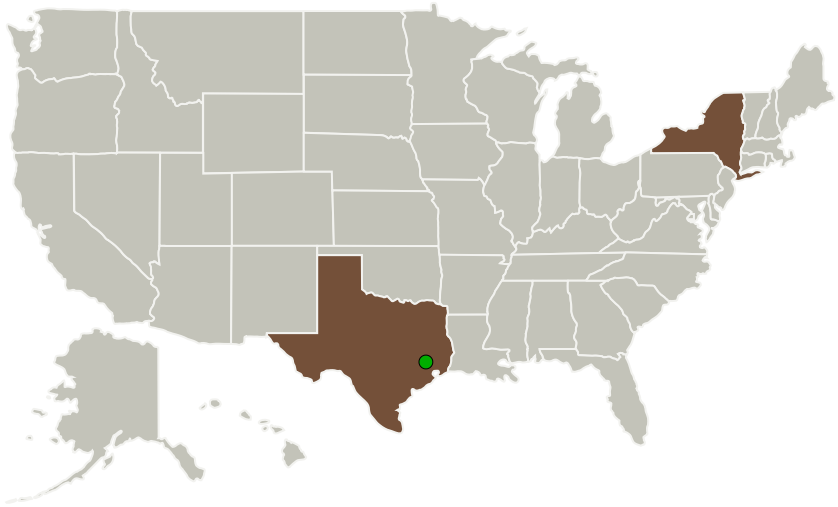
High Pressure EVA Glove (HPEG), Phase I

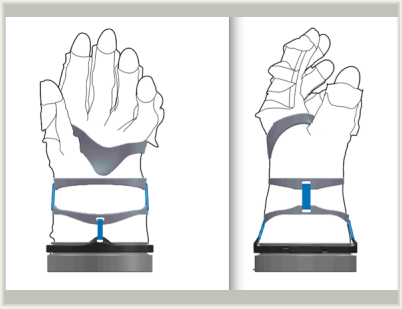
Completed Technology Project (2015 - 2015)

Project Introduction

Final Frontier Design's (FFD) High Pressure EVA Glove (HPEG) is a game changing technology enabling future exploration class space missions. The high operating pressure allows astronauts to conduct EVAs without a pre breathe penalty, greatly increasing efficiency. The HPEG increases astronaut comfort and reduces fatigue by allowing for a large Range of Motion with low joint torque throughout. In its current configuration, the glove has shown no signs of hand or fingernail trauma, representing a lower injury risk than current technology. Further, mass reductions from new materials and processes ensure that the HPEG will weigh significantly less than current technology. Sizing capabilities of the HPEG are also a technical improvement over current methods. FFD can establish all tooling, flat patterns, and restraint components from laser hand scans, deriving complex anthropomorphic geometries to exactly match the contours of the hand at the palm and fingertips, while customized flat pattern sizing occurs parametrically according to pre-defined hand anchor/reference points. Phase I of the HPEG will include 2 build rounds, with preliminary testing to take place unmanned during the contract, and a deliverable to include a single pressure garment and outer garment of the glove.

Primary U.S. Work Locations and Key Partners





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Organizations Performing Work	Role	Type	Location
Final Frontier Design	Lead Organization	Industry	Brooklyn, New York
Johnson Space Center(JSC)	Supporting Organization	NASA Center	Houston, Texas

Primary U.S. Work Locations	
New York	Texas

Project Transitions

June 2015: Project Start

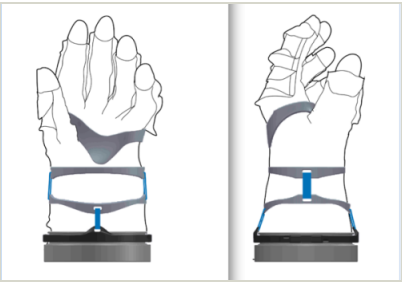
December 2015: Closed out

Closeout Summary: High Pressure EVA Glove (HPEG), Phase I Project Image

Closeout Documentation:

- Final Summary Chart Image*(https://techport.nasa.gov/file/139062)*

Images



Briefing Chart Image
High Pressure EVA Glove (HPEG), Phase I
(https://techport.nasa.gov/image/128359)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Final Frontier Design

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

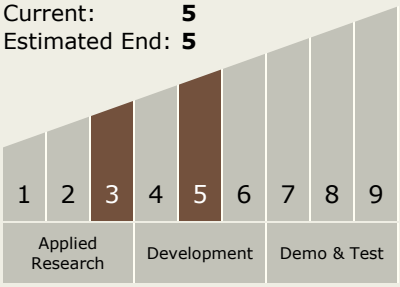
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Theodore C Southern

Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



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Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.2 Extravehicular Activity Systems
    - TX06.2.1 Pressure Garment

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System